PDB63

SHORT-TERM COST-EFFECTIVENESS ANALYSIS OF INSULIN DETEMIR VERSUS INSULIN NEUTRAL PROTAMINE HAGEDORN (NPH) IN PATIENTS WITH TYPE 2 DIABETES MELLITUS IN SPAIN

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OBJECTIVES: To estimate the short-term cost-effectiveness of insulin detemir compared with Neutral Protamine Hagedorn (NPH) insulin when initiating insulin treatment in patients with Type 2 Diabetes Mellitus (T2DM) in Spain. **METHODS:** A short-term (1 year) cost-effectiveness model was adapted to the Spanish public health care system. Based on a head-to-head randomized controlled trial (NCT00104182) that showed similar efficacy in glycemic control for both insulin types, weight gain (Δ=0.9Kg) and the rate of non-severe hypoglycemia (between-arms RR=0.52; IC95% 0.44-0.61) of detemir vs. NPH were selected as clinical outcomes. Costs (Euros 2014) were estimated from the perspective of the Spanish national health system and derived from national public sources. Only insulin treatment and management costs associated with non-severe hypoglycemic episodes were included in the analysis. According to a published study, non-severe hypoglycemia (a self-managed event) was assumed to imply the use of 5.3 glucometer strips and a visit to a general practitioner for 25% of patients (Orozco-Beltrán et al., 2014). The disutility value associated to weight gain was -0.0100 per BMI unit (Lee et al., 2005). The disutility associated to daytime and nocturnal non-severe hypoglycemia was -0.0041 and -0.0067 per event, respectively (Evans et al., 2013). **RESULTS:** The yearly gain in quality-adjusted life years (QALY) associated to insulin detemir versus NPH was 0.015. The estimated incremental cost of treating patients with insulin detemir versus NPH was €244.03. The incremental cost-effectiveness ratio (ICER) of insulin detemir versus NPH in insulin-naïve T2DM patients was estimated to be €16,381.18/QALY in Spain. This value is lower than those published for other European countries (€21,768-28,349/QALY) and is beneath the ICER threshold commonly accepted for Spain (€30,000/QALY). **CONCLUSIONS:** Insulin detemir is a cost-effective alternative to NPH insulin in the first and subsequent years of treatment of insulin-naïve T2DM patients in Spain.

PDB64

COST-EFFECTIVENESS ANALYSIS OF INSULIN DETEMIR VERSUS INSULIN NEUTRAL PROTAMINE HAGEDORN (NPH) IN PATIENTS WITH TYPE 1 DIABETES MELLITUS IN SPAIN

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OBJECTIVES: To estimate the short-term cost-effectiveness of insulin detemir compared with Neutral Protamine Hagedorn (NPH) insulin when initiating insulin treatment in patients with Type 1 Diabetes Mellitus (T1DM) in Spain. **METHODS:** A short-term (1 year) cost-effectiveness model was adapted to the Spanish public health care system. Based on the Update of CADTH Technology Report No. 92 (2008) that showed similar efficacy in glycemic control for both insulin types, the rate of hypoglycemia with detemir vs. NPH (RR=0.84; IC95% 0.74-0.97) was the considered clinical outcome. Costs, expressed in Euros 2014, were estimated from the perspective of the Spanish national health system and derived from national health care cost databases and publications. Only insulin treatment and management costs associated with non-severe hypoglycemic episodes were included in the analysis. Non-severe hypoglycemia, defined as a self-managed event, was assumed to imply the use of extra 5.3 glucometer strips during the following week and a visit to a general practitioner for 25% of patients (Orozco-Beltrán et al., 2014). The disutility associated to daytime and nocturnal non-severe hypoglycemia was -0.0041 and -0.0067 per event, respectively (Evans et al., 2013). **RESULTS:** The gain in quality-adjusted life years (QALY) associated to detemir versus NPH was 0.108. The estimated incremental cost of detemir versus NPH was €247.40. The incremental cost-effectiveness ratio (ICER) of detemir vs. NPH in patients with T1DM was estimated to be €2,286.67/QALY in Spain. This value is significantly lower than those reported for other European countries (€10,938-13,310/QALY) and are much lower than the ICER threshold commonly accepted for Spain (€30,000/QALY). **CONCLUSIONS:** Detemir is a cost-effective alternative to NPH insulin in the first year of treatment of insulin-naive T1DM patients in Spain.

PDB65

COST-EFFECTIVENESS-ANALYSIS OF THE NEW-BORN SCREENING IN AUSTRIA

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OBJECTIVES: Since more than 45 years, a preventive program for the detection of congenital metabolic and endocrine diseases is carried out successfully in Austria. The goal is to investigate every new-born a few days after birth to initiate a quality assured therapy as quickly as possible. Since 1966, this program is carried out by the Federal Ministry of Health at the University Clinic for Child and Adolescent Medicine, Medical University of Vienna. The aim of this study was to determine cost-effectiveness of the new-born screening. **METHODS:** We developed a decision-analytic model, which include specific Markov processes for the core disorders: Cystic Fibrosis (CF), phenylketonuria (PKU), medium-chain acyl-CoA (MCAD), congenital hypothyroidism (CH), galactosemia (GAL) and Maple syrup urine disease (MSUD). Costs and health benefits were estimated for a cohort of new-borns in Austria in 1 year. The analysis focused on lifetime consequences. This encompassed direct costs (including screening costs and cost of illness), quality-adjusted-life-years (QALYs) and reduced expectation of life. Costs were presented per child and for the Austrian birth cohort. Costs from published sources were used (2014 Euro) from the health care systems perspective. QALYs, life-years (LYs) and costs were projected over a life-time horizon and discounted at 3% p. a. **RESULTS:** We found ten-times higher lifetime costs per child without screening compared to screening. The incremental costs of screening ranged from 12.308 € (MCAD) to 291.332 € (PKU). Screening saved 181 € and 0.09 QALYs per infant in comparison to no-screening strategy. Transferred to the entire birth cohort newborn screening is able to reduce total costs by 14 million € from the Austrian health care systems perspective each year. **CONCLUSIONS:** Funding the new-born screening saves money and is cost-effective for the Austrian health care system.

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THE IMPACT OF LONG-TERM CLINICAL EVIDENCE ON COST-EFFECTIVENESS OF EXENATIDE ONCE WEEKLY (BYDUREON®) VERSUS INSULIN GLARGINE FOR PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) FROM A UK NHS PERSPECTIVE

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OBJECTIVES: When patients start their first injectable therapy, clinicians can choose between glucagon-like peptide-1 (GLP-1) agonists and basal insulins. This study investigates the cost-effectiveness of exenatide once weekly (Bydureon®), a GLP-1 agonist, compared with insulin glargine in patients inadequately controlled with metformin (±sulfonylureas) based on long-term clinical evidence. **METHODS:** The validated CARDIFF model was used to conduct the analyses. Clinical inputs were derived from a randomized clinical trial and a 3-year follow-up study of it comparing exenatide once weekly (ExQW) versus insulin glargine once daily. Based on these clinical inputs and the United Kingdom Prospective Diabetes Study (UKPDS) equations, the model predicts disease progression and the number of micro- and macro-vascular complications, along with diabetes-specific and all-cause mortality. The perspective of the National Health Service in the UK was adopted over a lifetime horizon. Local unit costs and utility data were assigned to the appropriate model parameters to calculate total Quality-Adjusted-Life-Years (QALYs) and total costs. Deterministic and probabilistic sensitivity analyses (PSA) were conducted. **RESULTS:** Long-term treatment with ExQW was well tolerated and associated with sustained glycaemic control and sustained weight loss over at least 3 years. Compared to glargine, ExQW in combination with metformin was associated with an incremental benefit of 0.123 QALYs (95%CI: 0.057; 0.178) at an additional cost of £1,722 (95%CI: £1,396; £2,089), resulting in an incremental cost-effectiveness ratio of £13,967 per QALY gained. The PSA showed that at a willingness-to-pay threshold of £20,000 per QALY gained, ExQW treatment had an 83% probability to be cost-effective compared to the strategy including glargine. Sensitivity analyses showed that results were robust to variation in model parameters that carry uncertainty. **CONCLUSIONS:** Exenatide once weekly in combination with metformin was shown to be a cost-effective treatment option as first injectable therapy in patients inadequately controlled with metformin within established UK cost-effectiveness thresholds.

PDB67

DAPAGLIFLOZIN (FORXIGA®) VERSUS GLIPIZIDE AS ADD-ON THERAPIES IN TYPE 2 DIABETES MELLITUS (T2DM); AN UPDATE OF THE COST-EFFECTIVENESS BASED ON LONG-TERM CLINICAL EVIDENCE FROM UK NHS PERSPECTIVE

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OBJECTIVES: To update the cost-effectiveness of dapagliflozin (Forxiga®), a selective sodium-glucose co-transporter-2 (SGLT-2) inhibitor, compared with a sulphonylurea (SU) when added to metformin in patients inadequately controlled with metformin mono-therapy based on long-term clinical evidence. **METHODS:** The published and validated CARDIFF diabetes model was used to conduct the analyses. Clinical inputs were derived from a 4-year follow-up study of a randomized clinical trial comparing dapagliflozin and glipizide in combination with metformin. Based on these clinical inputs and the United Kingdom Prospective Diabetes Study (UKPDS) equations, the model predicts disease progression and the number of micro- and macro-vascular complications, along with diabetes-specific and all-cause mortality. The perspective of the National Health Service in England and Wales was adopted over a lifetime horizon. Local unit costs and utility data were assigned to the appropriate model parameters to calculate total Quality-Adjusted-Life-Years (QALYs) and total costs. Deterministic and probabilistic sensitivity analyses (PSA) were conducted. **RESULTS:** Dapagliflozin showed greater durability of HbA1c reduction compared with SU and sustained weight loss over 4 years. Compared to SU added on top of metformin, dapagliflozin add-on to metformin was associated with an incremental benefit of 0.181 QALYs (95%CI: 0.088; 0.268) at an additional cost of £819 (95%CI: £415; £1,259), resulting in an ICER point estimate of £4,521 per QALY gained. The univariate analyses showed that no input parameter change inflated the ICER above £15,000 per QALY. The PSA showed that at a willingness-to-pay threshold of £20,000 per QALY gained, dapagliflozin treatment had an estimated 100% probability to be cost-effective compared to an SU treatment strategy. These findings were shown to be robust with all sensitivity analyses. **CONCLUSIONS:** Dapagliflozin in combination with metformin was shown to be a cost-effective treatment option for patients who are inadequately controlled with metformin mono-therapy within established UK cost-effectiveness thresholds.

PDB68

HEALTH ECONOMIC EVALUATION OF CANAGLIFLOZIN IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS IN PORTUGAL

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OBJECTIVES: To evaluate the cost-effectiveness of canagliflozin in dual therapy as add-on to metformin compared to sitagliptin and in triple therapy as add-on to metformin (MET) and sulfonylurea (SU) compared to sitagliptin. **METHODS:** The IMS CORE Diabetes Model was used to evaluate the cost-effectiveness of canagliflozin 100 mg and 300 mg versus sitagliptin 100 mg using data from both clinical trials and network meta-analysis, combined with Portuguese-specific data when available. The perspective of the analysis is societal in accordance with Guidelines for Economic Drug Evaluation Studies from INFARMED. **RESULTS:** The cost-effectiveness analyses indicate that canagliflozin (100 mg and 300 mg weighted average 65: 35) is cost-saving